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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BILGRAMI, ASGHAR H	

ART UNIT	PAPER NUMBER
2443	

NOTIFICATION DATE	DELIVERY MODE
04/21/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

tammy@ppglaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/074,019	CAMERON, KEN	
	Examiner	Art Unit	
	ASGHAR BILGRAMI	2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1- 9 & 11-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1- 9 & 11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1- 9 & 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (U.S. 6,338,078).

3. As per claims 1, 5 & 8 Chang disclosed a processing system comprising a plurality of processing engines for processing datagrams in a predetermined order, each processing engine comprising at least one input port, at least one output port and a plurality of processing elements, each processing element comprising an input port connected to the at least one input port of the processing engine, an output port connected to the at least one output port of the processing engine (col.5, lines 8-25) and arithmetic and logic means, and a ticket dispenser adapted to associate a ticket with each incoming datagram (col.5, lines 66-67 & col.6,lines 1-32) wherein the processing elements, upon becoming available, take a next ticket from the ticket dispenser (col.6, lines 33-50, 66-67 & col.7, lines 1-5), an the order of processing datagrams being controlled at the at least one input port of the processing engine and at the least one output port of the processing engine in dependence on ticket associated with the datagram or a group of the datagrams and the reading and writing of the read and

processed datagram takes place upon the process being given permission to continue (col.5, lines 66-67, col.6, lines 1-50). Although Chang did not explicitly disclose a ticket dispenser adopted to associate a ticket with each incoming datagram. However Chang disclosed a "hashing mechanism" (equivalent to a "ticket dispenser") that queues packets (datagrams) in a such a way that packets arrive at the device driver in a certain sequence (I.E value or number or weight or priority) and are then aligned according to that sequence to be processed by multiple processors (Figure.3, col.5, lines 8-26, lines 66-67, col.6, lines 1-32).

It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the use of "hashing mechanism" as disclosed by Chang instead of a "ticket dispenser" to align packets in a certain sequence to be processed by multiple processors in order to make the processing of the packets more efficient resulting in a more robust packet processing system.

4. As per claim 2 Chang disclosed a method according to claim 1, wherein the order of the datagrams or group of datagrams at the at least one input port corresponds to the order of the datagrams at the at least one output port (col.5, lines 66-67, col.6, lines 1-50).

5. As per claim 3 Chang disclosed a method according to claim 1, wherein the tickets comprise numerical values (col.5, lines 66-67, col.6, lines 1-50).

6. As per claim 4 Chang disclosed a method according to claim 1, wherein the ticket comprises a semaphore with data associated therewith (col.5, lines 66-67, col.6, lines 1-50).

7. As per claim 6 Chang disclosed a processing engine according to claim 5, wherein the processing element comprises an element of a multi threaded array processing engine (col.5, lines 1-26)

8. As per claim 7 Chang disclosed a processing engine according to claim 5, wherein the processing element can leave or enter the predetermined order (col.5, lines 66-67 & col.6, lines 1-32).

9. As per claims 9 Chang disclosed a processing system according to claim 8, wherein datagrams are processed in a round robin manner (col.6, lines 15-33 & col.7, lines 49-55).

10. As per claim 10 Chang disclosed a processing system according to claim 8 further comprising a ticket dispense for giving tickets to a datagram or group of datagrams (col.5, lines 66-67 & col.6, lines 1-50).

11. As per claim 11 Chang disclosed a processing system according to claim 10, wherein the tickets are issued on a first come first served basis ((col.5, lines 1-26, lines 66-67 & col.6, lines 1-50).

12. As per claim 12 Chang disclosed a processing system according to claim 8 further comprising a counter for maintaining the value of the current ticket (col.5, lines 66-67 & col.6, lines 1-50).

13. As per claim 13 Chang disclosed a processing system according to claim 12, wherein the counter comprises storage means for storing a numerical value (col.5, lines 66-67 & col.6, lines 1-50).

14. As per claim 14 Chang disclosed a processing system according to claim 13, wherein once a processing element is allocated a datagram or group of datagrams for processing, the counter is incremented (col.5, lines 66-67 & col.6, lines 1-50).

15. As per claim 15 Chang disclosed the method of claim 1, wherein a number of tickets is greater than a total number of processors (col.5, lines 14-17).

16. As per claim 16 Chang disclosed the method of claim 1, wherein the ticket represents an arrival time of the packet (col.6, lines 4-50).

17. As per claim 17 Chang disclosed the method of claim 1, wherein the processor drops selected datagrams from being written to the output buffer (col.6, lines 4-50).

18. As per claim 18 Chang disclosed the method of claim 1, wherein the processor enters or leaves a processing sequence (col.5, lines 29-39).

Response to Arguments

19. Applicant's arguments filed 12/29/2008 have been fully considered but they are not persuasive.

20. Applicant on first paragraph of a page 2 of the argument states that since independent claims 1, 5, & 8 do not recite semaphores therefore the use of semaphores is not necessarily required to determine an order of processing.

Contrary to the applicant's statement above, applicant's specification on pages 8 & 9 does disclose describes a direct relationship of "Semaphore" with the "ticket" which does play a role in the order of the data packets being processing. Applicant's specification states:

> The semaphore unit 210 has a number of features. One feature is the ability to maintain a set of semaphores. Each semaphore has associated with it some data which is returned to the client that performs the wait; in the method of the present invention these are called Tickets.

21. Applicant on the second paragraph of page.2 argued that Chang fails to disclose or suggest the processor(s), once they become available, taking the next ticket to process the associated datagram.

Applicant's is pointing to an obvious function in which a processor upon becoming available takes the next ticket to process the associated datagram and is arguing that this function is not being performed in Chang's disclosure. Examiner points out that since in Chang, processor is processing the packets that are queued in a sequence **it should be obvious that the packets are queued in a queue(s) having assigned a certain sequence for a reason (I.E because it is impossible to process all of the Packets at the same time)** so that the processor(s) can process the next datagram once they {I.E Processor(s)} becomes available {I.E Porcessor(s) are done processing the packets that had the higher priority}. Hence Chang clearly anticipates to the claim language and applicant's **argument** which **merely describes an obvious scenario** of the processing of that datagrams portrayed in the claim language.

22. Applicant on the last paragraph of page 2 argued that argue that Chang fails to disclose a ticket dispenser adopted to associate a ticket with each incoming datagram.

As to applicant's argument Chang disclosed a "hashing mechanism" (equivalent to a "ticket dispenser") that queues packets (datagrams) in a such a way that packets arrive at the device driver in a certain sequence (I.E value or number or weight or priority) and are then aligned according to that sequence to be processed by one or more processors (Figure.3, col.5, lines 8-26, lines 66-67, col.6, lines 1-32).
It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the use of "hashing mechanism" as disclosed by Chang instead of a "ticket dispenser" to align packets in a certain sequence to be processed by multiple processors in order to make the processing of the packets more efficient resulting in a more robust packet processing system.

22. On the first paragraph of page 4, applicant argued that examiner did not consider the amendments made to claim 1 which included reading and writing of data packets.

As to applicant's argument by adding limitation "reading and writing of data packets", the applicant is merely pointed an obvious function that has to happen when packets /datagram are processed. Hence the incorporation of "reading and writing of data packets" limitation did not change the scope of the claim but merely pointed out an obvious function.

23. Applicant is again advised to incorporate the unique details regarding the unique **functionalities & techniques** described in the specification for this invention which dictate the controlling the order of datagrams into all of the independent claims. The

current claim language is still broad and incorporating unique details into the claim language will be beneficial in moving this case in a positive direction.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

24. Allen, Jr. et al (U.S. 6,404,752 B1) disclosed network switch using network processor and methods.

25. Yoshida et al (U.S. 5,848,290) disclosed data driven information processor.

26. Richter et al (U.S. Pub. No. 2002/0107903 A1) disclosed methods and systems for the order serialization of information in a network processing environment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASGHAR BILGRAMI whose telephone number is (571)272-3907. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L.M. Dollinger can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./
Examiner, Art Unit 2443

/Tonia LM Dollinger/
Supervisory Patent Examiner, Art Unit 2443